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TECHPARK SÜDTIROL / ALTO ADIGE

SERVICES

Smart Mini Factory

Learning factory laboratory for applied research
in the field of Industry 4.0

Free University of Bolzano-Bozen
Faculty of Engineering

Head of Laboratory:
Prof. Erwin Rauch

SERVICES		All prices quoted are exclusive of VAT
Rental Cobot UR3	Description: The UR3 is the smallest collaborative robot from Universal Robots. It is an anthropomorphic manipulator with 6 rotary joints suitable for light assembly and handling tasks. Flexibility, versatility and accuracy, including user-friendly programming, are the main features of this multipurpose device. Technical data: – Degrees of freedom: 6 rotating joint – Payload: 3 kg – Reach: 500 mm – Repeatability: ±0.1 mm – Power Consumption: Min 90W; Typical 125W; Max 250W – Programming: Polyscope graphical user interface on touchscreen with mounting Application areas: Due to its high accuracy and low payload and reach, the UR3 is used in collaborative human-robot workstations for light product assembly and quality control.	500 Euro/week + VAT and transportation and insurance cost
Rental Cobot UR10	Description: The UR10 is the largest collaborative robot from Universal Robots. It is an anthropomorphic manipulator with 6 rotary joints suitable for heavier process tasks. Flexibility, versatility and accuracy, including user-friendly programming, are the main features of this multipurpose device. Technical data: – Degrees of freedom: 6 rotating joint – Payload: 10 kg – Reach: 1300 mm – Repeatability: ±0.1 mm – Power Consumption: Min 90W; Typical 250W; Max 500W – Programming: Polyscope graphical user interface on touchscreen with mounting Application areas:	750 Euro/week + VAT and transportation and insurance cost

LAB DESK

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	Due to the high accuracy, the higher payload and the larger operating radius, the UR10 is particularly suitable for the packaging, palletizing, assembly and pick-and-place sectors, where the distances between the various work areas are greater.	
3 days Basic training in Cobot programming (Italian)	Contents of the training package: 1) Day 1 - Theory: Introduction to Industry 4.0 and Basics of Collaborative Robotics – Basic concepts, Industry 4.0 technologies and cyber-physical systems. – Traditional and collaborative industrial robots: differences and characteristics of the technology. – Concept of collaboration, shared workspace and collaborative application. – Evaluation of potential uses and application areas. 2) Day 1 - Theory: Safety in collaborative robotics – Introduction to the Machinery Directive and the role of risk assessment. – Focus on mechanical risks in traditional and collaborative industrial robotics – The main regulations for safety in traditional and collaborative robotics – Safe collaboration modes according to the technical specification ISO TS 15066 – Human-robot contact modeling – Guidance on integrating safety into the development of work cells 3) Day 2 and 3 - Practice: Collaborative Robot Programming and Motion Planning – Robot installation, setup/configuration, gripper installation – Programming with Polyscope environment/ interface – Programming basics and basic commands for Universal Robot – Basics of motion planning for industrial robots – Development of a practical application in the group – Summary, specific questions, discussion and conclusion	Up to 5 participants 3.300 Euro and from 5 participants 660 Euro/participant

OTHER SERVICES - PRICE ON REQUEST		All prices quoted are exclusive of VAT
General feasibility analyses	This service includes feasibility analyses for specific problems in the company in the field of industrial production and assembly. For the feasibility analysis, equipment in the laboratory can be used or, in certain cases, the tests can be carried out on site at the company. After an initial meeting, the company is provided with an overview of activities, costs and times tailored to the specific problem	upon request
General concept studies	This service includes the development of concept studies in the field of industrial automation, flexible automation, planning and control, worker assistance and intelligent and data-supported manufacturing.	upon request
Industrialization of products or production systems	This service includes the support of companies in the industrialization of products or machines/systems. Common phases: Concept study, production of a prototype in the laboratory, subsequent support in the industrialization of the product/machine. Example of industrialized product https://www.wirecobots.com/	upon request

Simulation studies	This service includes the execution of simulation studies in the field of robotics (e.g. RobotStudio), process planning (e.g. visTable), virtual commissioning (i-physics), human-machine collaboration and ergonomics (Tecnomatix Process Simulate) or material flow analysis (e.g. FlexSim).	upon request
Study on the possibility of using cobots in manufacturing/ assembly.	This service includes the analysis of the current situation (e.g. in case of manual assembly) or of the product and the application of a quick assessment methodology developed by SMF for a first rough analysis of the suitability of cobots as well as the application of the detailed HRAA (Human-Robot Activity Allocation) methodology developed by SMF for the evaluation of productivity, safety and ergo-nomics when introducing cobots in manufacturing.	upon request
Study on the possibility of using worker assistance systems in production/ assembly	This service includes the application of analysis and selection methods developed by SMF for the selection of suitable worker assistance systems for industrial production. Depending on the application, the ASAM (Selection of Suitable Worker Assistance Systems Based on Attribute Procedure) methodology or ASCM (Selection of Suitable Worker Assistance Systems Based on Capabilities) methodology is applied.	upon request
Application testing for VR/AR	This service includes conducting tests on the use of Virtual Reality (VR) as well as Augmented Reality (AR) in industrial or construction environments.	upon request
Studies on physical and cognitive ergonomics at the workplace in the industrial sector	This service includes the performance of studies to investigate the current status in terms of safety as well as ergonomics (physical/cognitive) of industrial workplaces and the derivation of action measures of a technical or organizational nature to increase ergonomics in the workplace. Depending on the application, classical methods or simulation software are used for the implementation.	upon request
Implementation of trainings	The Smart Mini Factory Lab offers various types of training for skilled workers from trade and industry. These range from standard trainings to specific trainings for individual companies which are held at the university or at the company on site (e.g. basic training Industry 4.0). The topics range from an initial overview of Industry 4.0 to in-depth training on specific topics (digital production management, industrial robotics and automation, cobot programming, construction site 4.0, ...)	See website/brochure for standard training courses or upon request for specific training courses